WHITMAN COUNTY
GRANT NO. G1400494

CUMULATIVE IMPACTS ANALYSIS

FOR THE TOWN OF MALDEN SHORELINE MASTER PROGRAM

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TOWN OF MALDEN SHORELINE MASTER PROGRAM

1 INTRODUCTION

1.1 Background and Purpose

This Cumulative Impacts Analysis (CIA) is a required element of the Shoreline Master Program (SMP) update process. The State Master Program Approval/Amendment Procedures and Master Program Guidelines (SMP Guidelines; WAC 173-26-186(8)(d)) state that, "To ensure no net loss of ecological functions and protection of other shoreline functions and/or uses, master programs shall contain policies, programs, and regulations that address adverse cumulative impacts and fairly allocate the burden of addressing cumulative impacts." The CIA is intended to demonstrate that an SMP will not result in degradation of shoreline ecological functions over a 20-year planning horizon. This CIA can help the Town make adjustments where appropriate in its proposed SMP if there are potential gaps between maintaining and degrading ecological functions.

In accordance with the SMP Guidelines, this CIA addresses the following:

i. "Current circumstances affecting the shoreline and relevant natural processes [Chapter 2 below and *Final Shoreline Analysis Report for Shorelines in Whitman County; the Cities of Colfax, Palouse, Pullman, Tekoa, and the Towns of Albion, Malden, and Rosalia* (The Watershed Company and Berk 2014)];

ii. Reasonably foreseeable future development and use of the shoreline [Chapter 3 below and *Shoreline Analysis Report*]; and

iii. Beneficial effects of any established regulatory programs under other local, state, and federal laws." [Chapter 4 below]

The CIA assesses the policies and regulations in the draft SMP to determine whether no net loss of ecological function will be achieved as new development occurs. The baseline against which changes in ecological function are measured is the current shoreline conditions documented in the *Shoreline Analysis Report*. For those projects or activities that result in degradation of ecological functions, the required mitigation must return the resultant ecological function back to the baseline.

Despite SMP regulations that require avoidance, minimization, and mitigation for any unavoidable losses of function, some uses and developments cannot be fully mitigated. This could occur when mitigation is out-of-kind, meaning that it offsets a loss of function through an approach that is not directly comparable to the proposed impact. A loss of functions may also occur when impacts are sufficiently minor on an individual level, such that mitigation is not required, but are cumulatively significant. Unregulated activities (such as operation and maintenance of existing legal developments) may also degrade baseline conditions. Additionally, the Town of Malden SMP applies only to activities in shoreline jurisdiction, yet activities upland of shoreline jurisdiction or upstream in the watershed may have offsite impacts on shoreline functions.

Together, these different project impacts may result in cumulative, incremental, and unavoidable degradation of the overall baseline condition unless additional restoration of ecological function is undertaken. Accordingly, the *Shoreline Restoration Plan* (The Watershed Company 2014) is intended to be a source of ecological improvements implemented voluntarily that may help to bridge a gap between minor cumulative, incremental, and unavoidable damages and ensure no net loss of shoreline ecological functions.

1.2 Approach

This CIA was prepared consistent with direction provided in the SMP Guidelines as described above. Existing conditions were first evaluated using the information, both textual and graphic, developed and presented in the *Shoreline Analysis Report*. Likely development identified in the *Shoreline Analysis Report* was addressed further to understand the extent, nature, and general location of potential impacts.

The effects of likely development were then evaluated in the context of SMP provisions, as well as other related plans, programs, and regulations. For the purpose of evaluating impacts, areas with a likelihood of high densities of new development or redevelopment were evaluated in greatest detail. Cumulative impacts were analyzed quantitatively where possible. A qualitative approach was used where specific details regarding redevelopment likelihood or potential were not available at a level that could be assessed quantitatively or the analysis would be unnecessarily complex to reach a conclusion that could be derived more simply.

2 SUMMARY OF EXISTING CONDITIONS

The following summary of existing conditions is based on the *Shoreline Analysis Report*. More detailed information on specific shoreline areas is provided in the full report.

2.1 Ecological

Malden lies within the Palouse watershed, WRIA 34, which covers the majority of Whitman County. The Palouse River originates in the Bitterroot Mountains in northern Idaho, and flows westerly into Whitman County before joining the Snake River at the Whitman/Franklin County line. The topography of the Palouse watershed transitions from mountainous terrain in Idaho to rolling hills composed of basalt covered with loess in the central portion of the watershed. The far western portion of the watershed is in an area called the Channeled Scablands. This area was shaped by massive floods over the past million years, which left behind exposed channels of the underlying basalt amongst islands of loess (HDR and EES 2007).

Precipitation primarily occurs in the winter months, and ranges from 10 inches in the west to 50 inches in the eastern portion of the watershed (HDR and EES 2007). Many of the smaller stream channels are dry in the summer. Major tributaries in the watershed include the North and South Forks, Rebel Flat Creek, Rock Creek, Pine Creek, Union Flat Creek and Cow Creek.

Pine Creek is the only shoreline within the Town of Malden. It flows west through the northern half of the town. Shorelands are primarily in agricultural use with occasional sparse scrub/shrub or forested vegetation scattered along the reach, mostly in the western half. Generally a narrow band of dense herbaceous vegetation separates the channel from cultivated crops which dominate the shorelands. Moderate habitat function is present as there is very little development and some wetland and riparian habitat is present. There is also undisturbed connectivity between the channel and evergreen forest located upslope. No listed fish species are documented in Pine Creek.

Historically, the dominant vegetation in the Palouse watershed was a bunchgrass association. Much of that vegetation has been converted to dryland agriculture or altered by rangeland uses. Soil erosion resulting from storm water runoff has been a continuing problem throughout WRIA 34 as a result of land conversions to agriculture. An estimated 40% of the topsoil in the Palouse has been lost to erosion during this time (HDR and EES 2007).

Water quality concerns are primarily from non-point sources throughout most of the watershed, including erosion, livestock, fertilizers, and septic systems, which contribute sediment, fecal coliforms, and nutrients. Temperature is also a concern in many of the waterbodies in the watershed. The Department of Ecology identifies portions of Pine Creek as a Category 5, impaired, waterbody for the parameters of dissolved oxygen and bacteria. However the listing does not include the reach which flows through the Town of Malden.

Agricultural uses are the main shoreline modifications through Malden. Generally a narrow band of dense herbaceous vegetation separates the channel from cultivated crops which dominate the shorelands. Trees or shrubs are occasionally present helping to provide bank stabilization. No armoring and moderately sloped banks are present providing some hydrologic function, however no floodplain is mapped. There is generally undisturbed connectivity between the channel and evergreen forest located upslope.

The reach is located on shallow alluvial soils which provide hyporheic function because of their ability to store water and help support vegetation within the shoreline area. Some riverine wetlands are present to store and filter water.

2.2 Land Use

The Town of Malden has a population around 200. The shoreline jurisdiction includes 58 acres along slightly more than a mile of Pine Creek. The entire shoreline jurisdiction is classified as being in agriculture use. Zoning and ownership data for Malden's shorelines is not available.

The current shoreline environment designation is Urban. According to the current (1974) Shoreline Management Master Program, the Urban designation is meant to provide "optimum utilization of shorelines within urbanized areas by providing for intensive public use and by managing development so that it enhances and maintains shorelines for a multiplicity of uses."

Water-oriented uses within Malden are limited. As noted above, land use in the shoreline is classified as agriculture. There are no other identified water-oriented uses.

There is little transportation infrastructure within the shoreline of the Town of Malden. The existing transportation infrastructure includes only the former railbed that is now designated as the John Wayne Trail. There is one road (A Street) within shoreline jurisdiction that crosses Pine Creek and connects the north and south parts of town.

There are no recreation sites within the Town. The John Wayne Pioneer Trail provides public access to shorelines along 2,365 lineal feet of trail. Motorized access, hunting and any access except by permit from the state parks Rangers is prohibited.

The Washington State Parks Department is planning to convert nine miles of abandoned rail bed to trail and will construct a trailhead at Malden in a former rail yard (Prager 2014). The proposed Malden Trailhead is located on approx. 3.0 acres in the Town of Malden with vehicular trailhead access, 8 trailer parking spaces, 12 standard parking spaces, restrooms, 2 picnic shelters, equestrian tie downs, vehicle/trail barriers, and an informational kiosk and directional signage.

3 EFFECTS OF ESTABLISHED PROGRAMS

3.1 Current Town Regulations and Programs

All development activity within Malden is required to comply with the Malden Municipal Code (MMC). Provisions in the MMC that potentially affect how future development is implemented and the extent of potential ecological impacts include critical area regulations and zoning. The following are descriptions of these relevant regulations and how they help to maintain shoreline functions.

Critical Areas Regulations

Town regulations applicable to critical areas are contained in Malden Municipal Code Chapter 17.12, adopted via Ordinance No. 444 in July 2007. In those regulations, the Town requires wetland buffers between 50 and 250 feet based solely on wetland category (MMC 17.12.050.C). No stream buffer widths are specified, although the regulations require preparation of a habitat management plan based on best available science and a demonstration that a project would not degrade functions and values of the habitat (MMC 17.12.070). The Town's critical areas regulations also apply to geologically hazardous areas and critical aquifer recharge areas. The Town has a flood damage prevention ordinance which contains regulations for frequently flooded areas.

Zoning Code

Zoning standards direct the location of uses, building bulk, and scale. Information regarding Malden's existing zoning was not available for this analysis.

3.2 State Agencies/Regulations

Aside from the Shoreline Management Act (SMA), state regulations most pertinent to moderation of ecological impacts of development in the Town's shoreline include the State Hydraulic Code, the Growth Management Act, State Environmental Policy Act (SEPA), tribal agreements and case law, and Water Resources Act. A variety of agencies (e.g., Washington Department of Ecology, Washington Department of Fish and Wildlife, Washington Department of Natural Resources) are involved in implementing these regulations or managing state-owned lands. The Department of Ecology reviews all shoreline projects that require a shoreline permit, but has specific regulatory authority over Shoreline Conditional Use Permits and Shoreline Variances. Other agency reviews of shoreline developments are typically triggered by in- or over-water work, discharges of fill or pollutants into the water, or substantial land clearing. During the comprehensive SMP update, the Town has considered other state regulations to ensure consistency as appropriate and feasible with the goal of streamlining the shoreline permitting process. A summary of some of the key state regulations by agency responsibilities follows.

Washington Department of Natural Resources

Projects on state-owned aquatic lands may be required to obtain an Aquatic Use Authorization from Washington Department of Natural Resources (WDNR) and enter into a lease agreement. WDNR will review lease applications to determine if the proposed use is appropriate, and to ensure that proposed mitigation for impacts to aquatic resources are sufficient.

WDNR is also responsible for administering the Surface Mining Act. The Act requires a permit for each mine that: 1) results in more than 3 acres of mine-related disturbance, or 2) has a high-wall that is both higher than 30 feet and steeper than 45 degrees. A reclamation plan is required that describes how the site will be restored following mining activity to maintain stable slopes, diverse landscape features, and dense, native vegetation. In coordination with SMP standards, the Act helps ensure that mining activities do not result in long-term adverse effects on shoreline functions.

Washington Department of Ecology

The Washington Department of Ecology may review and condition a variety of project types, including any project that needs a permit from the U.S. Army Corps of Engineers (see below), any project that requires a Shoreline Conditional Use Permit or Shoreline Variance, and any

project that disturbs more than 1 acre of land. Project types that may trigger Ecology involvement include pier and shoreline modification proposals and wetland or stream modification proposals, among others. Ecology's three primary goals are to: 1) prevent pollution, 2) clean up pollution, and 3) support sustainable communities and natural resources (http://www.ecy.wa.gov/about.html). Ecology may comment on local SEPA review if it is an agency of jurisdiction.

Washington Department of Fish and Wildlife

Via the Hydraulic Code (chapter 77.55 RCW), the Washington Department of Fish and Wildlife (WDFW) has the authority to review, condition, and approve or deny "any construction activity that will use, divert, obstruct, or change the bed or flow of state waters." Practically speaking, these activities include, but are not limited to, installation or modification of piers, shoreline stabilization measures, culverts, and bridges. WDFW typically conditions such projects to avoid, minimize, and/or mitigate for damage to fish and other aquatic life, and their habitats.

3.3 Federal Agencies/Regulations

Federal review of shoreline development is in most cases triggered by in- or over-water work, or discharges of fill or pollutants into the water. Depending on the nature of the proposed development, federal regulations can play an important role in the design and implementation of a shoreline project, ensuring that impacts to shoreline functions and values are avoided, minimized, and/or mitigated. A summary of some of the key federal regulations which may apply to shoreline development in Malden follows.

Clean Water Act

Major components of the Clean Water Act include Section 404, Section 401, and the National Pollutant Discharge Elimination System (NPDES).

Section 404 provides the Corps, under the oversight of the U.S. Environmental Protection Agency, with authority to regulate "discharge of dredged or fill material into waters of the United States, including wetlands" (http://www.epa.gov/owow/wetlands/pdf/reg_authority_pr.pdf). The extent of the Corps' authority and the definition of fill have been the subject of considerable legal activity. As applicable to the Town's shoreline jurisdiction, however, it generally means that the Corps must review and approve many activities in streams, lakes and wetlands. These activities may include wetland fills, stream and wetland restoration, and culvert installation or replacement, among others. The Corps requires projects to avoid, minimize, and compensate for impacts.

A Section 401 Water Quality Certification is required for any applicant for a federal permit for any activity that may result in any discharge to waters of the United States. States and tribes

may deny, certify, or condition permits or licenses based on the proposed project's compliance with water quality standards. In Washington State, the Department of Ecology has been delegated the responsibility by the U.S. Environmental Protection Agency for managing implementation of this program.

The NPDES is similar to Section 401, and it applies to ongoing point-source discharge. Permits include limits on what can be discharged, monitoring and reporting requirements, and other provisions designed to protect water quality. Examples of discharges requiring NPDES permits include municipal stormwater discharge, wastewater treatment effluent, or discharge related to industrial activities or aquaculture facilities.

Endangered Species Act (ESA)

Section 9 of the ESA prohibits "take" of listed species. Take has been defined in Section 3 as: "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." The take prohibitions of the ESA apply to everyone, so any action that results in a take of listed fish or wildlife would be a violation of the ESA and is strictly prohibited. Per Section 7 of the ESA, activities with potential to affect federally listed or proposed species and that either require federal approval, receive federal funding, or occur on federal land must be reviewed by the National Marine Fisheries Service (NOAA Fisheries) and/or U.S. Fish and Wildlife Service (USFWS) via a process called "consultation." Activities requiring a Section 10 or Section 404 permit also require such consultation if these activities occur in waterbodies with listed species. Section 4(f) of the ESA directs the Services to develop or appoint teams to develop and implement recovery plans for threatened and endangered species. Whitman County is a member of the Snake River Salmon Recovery Board, and County staff contributed to the development of the 2011 Snake River Salmon Recovery Plan for Southeast WA (Snake River Salmon Recovery Board 2011).

4 APPLICATION OF THE SMP

This section describes how the proposed SMP protects shoreline functions. The following components of the SMP are integral to ensuring no net loss of shoreline functions. Each of these components is discussed in further detail below.

- Shoreline environment designations are based on existing shoreline conditions. Allowed uses focus high-intensity development in areas with a high level of existing alterations, while limiting future uses in areas where ecological functions and processes are more intact.

- SMP standards require applicants to avoid, minimize, and then compensate for unavoidable impacts to shoreline functions. Where SMP standards do not provide specific, objective measures that clarify avoidance, minimization, and mitigation measures, a mitigation sequencing analysis is required.
- Shoreline critical areas regulations are consistent with recommended state guidance to maintain ecological functions.
- Specific policies and regulations government shoreline uses and modifications ensure that potential impacts are regulated to avoid a net loss of ecological function, while also meeting the requirements of the Shoreline Management Act pertaining to public access, prioritization of shoreline uses, and private property rights.

4.1 Environment Designations

The assignment of environment designations can help minimize cumulative impacts by concentrating development activity in lower functioning areas or areas with more intensive existing development that are not likely to experience significant function degradation with incremental increases in new development or redevelopment. According to the SMP Guidelines (WAC 173-26-211), the assignment of environment designations must be based on the existing use pattern, the biological and physical character of the shoreline, and the goals and aspirations of the community as expressed through a comprehensive plan.

Consistent with SMP Guidelines, Malden's environment designation system is based on the existing use pattern, the biological and physical character of the shoreline, and community interests. The *Shoreline Analysis Report* provided information on shoreline conditions and functions that informed the development of environment designations. As only one shoreline is present in Malden with generally consistent characteristics through the entire Town, only one upland environment designation is proposed:Urban Conservancy. All areas waterward of the OHWM are designated Aquatic. Criteria for each environment designation are provided in Table 4-1.

Table 4-1. Environment designation criteria

Environment Designation	Classification Criteria
Urban Conservancy	Areas of properties that: • Lie in the Town limits; • Are planned for development that is compatible with the principals of maintaining or restoring the ecological functions of the area; • Are suitable for water-enjoyment uses; • Are open space or floodplains, or; • Are areas that retain important ecological functions which should not be more intensively developed.

Environment Designation	Classification Criteria
Aquatic	Lands waterward of the ordinary high-water mark.

The Urban Conservancy environment designation is designed to protect the existing ecological functions of open space, floodplain and other sensitive areas of shoreline jurisdiction, while allowing a variety of compatible uses consistent with the natural character of the shorelands and agricultural character of the Town.

4.2 Effects of Critical Areas Regulations

The SMP includes policies and regulations to avoid cumulative effects to critical areas (SMP Appendix B). Mitigation sequencing is required for all proposed impacts to shoreline critical areas, including wetlands, fish and wildlife habitat conservation areas (which includes streams), critical aquifer recharge areas, frequently flooded areas and geologically hazardous areas (Appendix B, Section 2.E.2). Key SMP regulations proposed for wetlands and streams which should help ensure no net loss of ecological function include standard buffer areas which are discussed in greater detail below.

Wetlands

The SMP requires vegetated buffers for all shoreline wetlands. Mitigation sequencing is required for impacts to wetland buffers as well as to wetlands. The proposed standard wetland buffer widths are based on the wetland category and habitat scores and are consistent with Ecology's "*Wetlands in Washington State-Volume 2: Guidance for Protecting and Managing Wetlands*," modified to use with the 2014 Washington State Rating System for Eastern Washington (Granger et al. 2005). Use of the standard buffer widths also requires implementation of measures to minimize impacts of adjacent land use. If the prescribed minimization measures are not applied the buffer width must be increased (Appendix B, Section 3.C). Buffer averaging is permitted provided that the buffer is increased adjacent to the higher-functioning area of habitat or more-sensitive portion of the wetland and decreased adjacent to the lower-functioning or less-sensitive portion and that minimum buffer widths in Appendix B, Subsection 3.E(3-4) are met. The proposed SMP standards should ensure that wetland functions are maintained over time.

Streams

Pine Creek and other streams occurring in shoreline jurisdiction are designated as Fish and Wildlife Habitat Conservation Areas. As such, buffers are required to protect stream function. Stream and stream buffer regulations are contained in the Fish and Wildlife Habitat

Conservation Area section of the critical areas regulations (Appendix B, Section 5). The buffer on Pine Creek, developed to be consistent with existing conditions, as generally described as part of the *Shoreline Analysis Report*, is the lesser of 100 feet or the waterward edge of an improved road (Appendix B, Subsection 5.D(3)(d)). The buffer is measured outward, on the horizontal plane, from the ordinary high water mark or from the top of bank if the ordinary high water mark cannot be identified. The buffer further protects intact shoreline functions by ensuring a broad undisturbed riparian area.

For non-shoreline tributaries within shoreline jurisdiction, a buffer of 50 feet, or the waterward edge of an improved road are required. Buffers on non-shoreline streams within shoreline jurisdiction help ensure that riparian functions are maintained at ecologically significant confluence areas.

4.3 Mitigation Sequencing

The proposed SMP includes general regulations requiring projects to be designed, located, sized, constructed and maintained to achieve no net loss of shoreline ecological functions. Mitigation sequencing standards apply to all projects in shoreline jurisdiction. In some cases, specific provisions are applied by the SMP that stipulate objective standards for avoiding (e.g., placement), minimizing (e.g., size, materials, and design standards), and compensating for unavoidable impacts (e.g. specific planting requirements). If a proposed shoreline use or development is entirely addressed by those specific, objective standards contained in the SMP, then further mitigation sequencing analysis is not required. However, when a proposed shoreline use or development is addressed in any part by discretionary standards (such as standards requiring a particular action "if feasible" or requiring the minimization of development size) then description of the analysis of mitigation sequencing is required with any shoreline application (Subsection 4.3(B)(3)). The application of mitigation sequencing standards should help ensure that shoreline uses and modifications achieve no net loss of shoreline ecological functions.

4.4 Shoreline Restoration Plan

One of the key objectives that the SMP must address is "no net loss of ecological functions necessary to sustain shoreline natural resources" (Ecology 2011). Although the implementation of restoration actions to restore historic functions is not required by SMP provisions, the SMP Guidelines state that "master programs shall include goals, policies and actions for restoration of impaired shoreline ecological functions. These master program provisions should be designed to achieve overall improvements in shoreline ecological functions over time, when compared to the status upon adoption of the master program" (WAC 173-26-201(2)(f)).

The *Shoreline Restoration Plan for Shorelines in Whitman County, The Cities of Colfax, Palouse, Pullman and Tekoa and the Towns of Albion, Malden, and Rosalia* (*Shoreline Restoration Plan*) represents a vision for restoration that will be implemented over time, resulting in a gradual improvement over the existing conditions. Although the SMP is intended to achieve no net loss of ecological functions through regulatory standards alone, practically, an incremental loss of shoreline functions at a cumulative level may occur through minor, exempt development; illegal development; failed mitigation efforts; or a temporal lag between the loss of existing functions and the realization of mitigated functions. The *Shoreline Restoration Plan*, and the voluntary actions described therein, can be an important component in making up that difference in ecological function.

Major *Shoreline Restoration Plan* components that are expected to contribute to improvement in ecological functions in the foreseeable future are summarized below:

These include projects to:

- Restore instream habitat complexity
- Setback dikes
- Address impacts to existing riparian conditions by implementing livestock fencing and other actions that remove activities from the riparian corridor
- Implement best management practices to improve water quality conditions

Another restoration opportunity specific to the Town of Malden includes The John Wayne Pioneer Trail, which runs through the Pine Creek shoreline upstream and downstream of Malden. The trail offers great restoration potential for providing opportunities for public involvement and education.

4.5 Effects of SMP Standards on Commonly Occurring Foreseeable Uses

As discussed previously, WAC 173-26-186(8)(d) directs local SMPs to evaluate and consider cumulative impacts of "reasonably foreseeable future development on shoreline ecological functions." Although future development may include other less common types of development, the location, timing, and impacts of less common uses and development projects are less predictable. WAC 173-26-201(3(d)(iii) states:

> *For those projects and uses with unanticipatable or uncommon impacts that cannot be reasonably identified at the time of master program development, the master program policies and regulations should use the permitting or conditional use permitting processes to ensure that all*

impacts are addressed and that there is not net loss of ecological function of the shoreline after mitigation.

Anticipated development in Malden is expected to be limited in terms of location and extent. The entire shoreline jurisdiction is classified as being in agricultural use, and given growth and land use trends in the Town, and the County overall, these existing uses are expected to continue. While ongoing agricultural activities on existing agricultural land are not subject to the SMP, some proposed new uses or modifications (for example, adding or expanding agricultural equipment) are subject to the SMP.

The following discussion further addresses the extent to which future changes to shoreline land uses and modification are anticipated, and describes how the SMP would apply to each of these changes to help maintain no net loss of functions.

Agriculture

Likelihood of development: All of Malden's shorelines are classified as being in agricultural use. Given the land use trends in the Town and County, these uses are expected to continue. Since the vast majority of land is presently in agricultural use, it is unlikely that additional lands will be converted to agriculture. However, it is possible, although not commonly anticipated, that existing agricultural lands could be converted to a non-agricultural use.

Application of the SMP: The SMP provisions do not limit or require modification to ongoing agricultural activities. SMP provisions apply to new agricultural activities or expansion of such activities on land not meeting the definition of agricultural land; conversion of agricultural lands to non-agricultural uses. In such cases, shoreline buffers consistent with Appendix B, Subsection 5.D(3)(d), as well as other standards applicable to the proposed use and any proposed modifications would apply.

Aquaculture

Likelihood of development: No aquaculture currently exists in Malden. No new aquaculture facilities are anticipated; however, it is possible that a new facility could be developed.

Application of the SMP: Only new non-commercial aquaculture may be permitted (Section 4.10). Any new aquaculture facility would need to be designed and located to avoid a net loss of ecological functions (Subsection 5.2(B)(1)(d)). Mitigation sequencing, as described above, would apply.

Boating Facilities

Likelihood of development: No boating facilities currently exist in Malden and no new boating facilities are anticipated.

Application of the SMP: The SMP prohibits all new boating facilities (Section 4.10, Shoreline Use and Modification Table).

Commercial Development

Likelihood of development: Commercial development does not currently exist in shoreline jurisdiction. The most likely type of commercial development to occur in the future would be recreation-related. Such development could be related to seasonal fishing or hunting facilities.

Application of the SMP: Common effects of commercial development include increased impervious surfaces, increased traffic, and vegetation clearing. Under the proposed SMP, Recreation concessions are the only type of commercial development permitted by a Shoreline Development Permit. Visitor-serving uses are a conditional use and all nonwater-oriented retail, trade or service is prohibited (Section 4.10). All types of commercial development shall be located, designed, and constructed in a way that ensures no net loss of shoreline ecological functions and without significant adverse impacts to other preferred land uses and public access opportunities (Subsection 5.4(B)(7)).

Forest Practices

Likelihood of development: Forestry practices are not a current or anticipated use in Malden's shoreline jurisdiction.

Application of the SMP: All forest practices are prohibited (Section 4.10).

In Stream Structural Uses

Likelihood of development: Existing in-stream uses appear to be limited to those associated with existing agricultural practices. Maintenance and repair of existing structures is anticipated. New in-stream structures would likely be limited to new irrigation diversion or discharge structures.

Application of the SMP: Instream structures are typically intended to modify flows, which can result in alterations to circulation patterns, water quality, and habitat access and conditions.

The SMP permits in-stream structures that protect public facilities; protect, restore, or monitor ecological functions or processes; or support agriculture. All other structures are a conditional use. Per Subsection 5.4(B)(1), in-stream structures must provide for the protection and preservation of ecosystem-wide processes, ecological functions, and cultural resources,

including, but not limited to, fish and fish passage, priority habitats and species, other wildlife and water resources, shoreline critical areas, hydrogeological processes, and natural scenic vistas. In addition, natural in-water features, such as snags, uprooted trees, or stumps, shall be left in place unless it can be demonstrated that they are actually causing bank erosion or higher flood stages or pose a hazard to navigation or human safety (Subsection 5.4(B)(5)). All in-stream structures must comply with mitigation sequencing and shall ensure no net loss of ecological function (Subsection 5.4(B)(6)).

Mining

Likelihood of development: Mining is not a current or anticipated use in Malden's shorelines.

Application of the SMP: All mining practices are prohibited (Section 4.10).

Industrial Development

Likelihood of development: No industrial uses are currently present in Malden's shorelines. It is possible, though unlikely that new industrial development may be proposed. New industrial uses would most likely be agricultural-related.

Application of the SMP: Common effects of industrial development include increased impervious surfaces, increased risk of contaminant spills and water quality contamination, and shoreline modifications, which may affect instream habitat. The draft SMP includes provisions to minimize the effects of new or redeveloped industrial uses. Specifically, Subsection 5.5(B)(2)(a) would require that industrial development be located, designed, constructed, and operated in a manner that minimizes impacts to the shoreline, provides for no net loss of shoreline ecological function. Additionally, industrial development and redevelopment shall be encouraged to locate where environmental cleanup and restoration of the shoreline area can be incorporated (Subsection 5.5(B)(2)(f)).

Recreational Development

Likelihood of development: No formal recreation sites are currently present in shoreline jurisdiction. An undeveloped portion of The John Wayne Pioneer Trail runs parallel to shoreline jurisdiction. The Washington State Parks and Recreation Commission is planning to convert nine miles of the abandoned rail bed to trail, and will construct a trailhead at Malden in a former rail yard (Prager 2014).

Application of the SMP: Recreational development can result in increased impervious surfaces, increased use of pesticides and fertilizers, and increased potential for riparian degradation. Per SMP Subsection 5.6(B)(1), recreational development shall demonstrate achievement of no net loss of ecological functions.

Residential Development

Likelihood of development: While Malden's shoreline jurisdiction is currently almost entirely undeveloped, some residential accessary structures may be present and future residential development could occur. However, significant residential growth is not anticipated in the Town.

Application of the SMP: Rural residential development typically is associated with an increased potential for water quality contamination from failed septic systems, as well as increased use of household chemicals, and disturbance of riparian corridors. Subsection 5.7(B)(3) requires that new residential lots created through land division shall comply with all applicable subdivision and zoning regulations, assure that no net loss of ecological functions result from the plat or subdivision at full build-out of lots, prevent the need for new shoreline stabilization or flood hazard reduction measures. Similarly, new residential development shall be located to avoid the need for shoreline stabilization and located, designed, and constructed in a manner that assures no net loss of shoreline ecological functions (Subsection 5.7(B)(4)). Residential development will also need to comply with buffer and critical area requirements, which provide additional protection for natural resources.

Transportation and Parking

Likelihood of development: Existing transportation infrastructure is very limited. There is only one road (A Street) within shoreline jurisdiction that crosses Pine Creek and connects the north and south parts of town. New transportation facilities are not generally anticipated; however, replacement, repair, and maintenance of A Street is likely.

Application of the SMP: New transportation and parking facilities are associated with increased stormwater discharge, increased shoreline crossing structures, and riparian disturbance. The SMP limits development of new transportation facilities or parking areas in shoreline jurisdiction if other options outside of shoreline jurisdiction are available and feasible (Subsection 5.8(B)(4)). When new roads, road expansions, or railroads are unavoidable, proposed transportation facilities shall be planned, located, and designed to minimize possible adverse effects on unique or fragile shoreline and maintain no net loss of shoreline ecological functions and implement mitigation standards of this SMP (Subsection 5.8(B)(3-4)).

Repair and maintenance of transportation facilities are addressed below under "Redevelopment, Repair, and Maintenance."

Utilities

Likelihood of development: Primary utility facilities may be developed to supply existing undeveloped areas with utilities or to upgrade utilities to existing developed areas; however,

these are not expected to commonly occur. Regular maintenance and repair of existing utilities is anticipated throughout shoreline jurisdiction.

Application of the SMP: Utilities have the potential to disrupt shoreline functions through an associated need for shoreline armoring; the potential for spills or leakage; and disturbance to riparian areas. In order to limit the spatial extent of any impacts from new utilities, under Subsection 5.9(B)(4) of the proposed SMP, preference shall be given to utility systems contained within the footprint of an existing right-of-way or utility easement over new locations for utility systems. Additionally, transmission lines, cables, pipelines, and nonwater-oriented components of production and processing facilities shall be located outside of shoreline jurisdiction, where feasible (Subsection 5.9(B)(2)). Utility projects allowed within shoreline jurisdiction shall be designed to achieve no-net-loss of shoreline ecological function, preserve the natural landscape, and minimize conflicts with present and planned land and shoreline uses (Subsection 5.9(B)(1)).

Repair and maintenance of utilities facilities are addressed below under "Redevelopment, Repair, and Maintenance."

Redevelopment, Repair, and Maintenance

Likelihood of development: The majority of activities within shoreline jurisdiction will likely fall under repair and maintenance. Few structures exist in shoreline jurisdiction, but those that do may require regular maintenance and repair, in addition to A Street and any existing utilities.

Application of the SMP: Potential impacts from repair and maintenance activities are generally temporary in nature, including such effects as turbidity and other temporary water quality impacts. Repair and maintenance activities are exempt from a Shoreline Substantial Development Permit, but SMP standards still apply. Therefore, ongoing maintenance and repair activities shall be conducted consistent with the SMP provisions. Where expansion or redevelopment is proposed, the required provisions shall be related to and in proportion to the proposal, as determined by the SMP Administrator (Subsection 5.10(B)(3)).

Breakwaters, Jetties, Weirs, and Groins

Likelihood of development: Few, if any, new breakwaters, jetties, weirs or groins are anticipated.

Application of the SMP: Breakwaters, jetties, weirs and groins are usually intended to alter currents or to deflect or dissipate wave energy. These structures have the potential to cause unintended impacts on natural bank erosion, sediment transport processes, and habitat. New breakwaters, jetties, weirs or groins are permitted to protect or restore ecological function. All other purposes require a conditional use permit (Section 4.10). Where new structures are permitted, they would need to demonstrate no net loss of ecological function and be the

minimum size necessary (Subsection 6.2(B)(1-2)). Shoreline critical area protection and mitigation sequencing would apply to any proposed project (Subsection 6.2(B)(3)).

Dredging and Dredge Material Disposal

Likelihood of development: There are no known plans for new significant dredging or dredge material disposal. It is possible that smaller dredging projects could be proposed as part of other shoreline uses or developments.

Application of the SMP: Dredging activities have potential short-term and long-term effects on the aquatic environment. Temporary effects include elevated turbidity and direct habitat disturbance. Long-term effects stem from the alteration of currents and sediment transport processes, both to on-site and downstream areas.

Subsection 6.3(B)(3) requires that dredging and dredge material disposal be done in a manner that avoids or minimizes significant ecological impacts. Impacts that cannot be avoided must be mitigated in a manner that assures no net loss of shoreline ecological functions. Additionally, dredge disposal is only permitted if shoreline ecological functions and processes will be preserved, restored, or enhanced, and erosion, sedimentation, floodwaters, or runoff will not increase adverse impacts to shoreline ecological functions and processes or property (Subsection 6.3(B)(6)).

Fill and Excavation

Likelihood of development: Fill and excavation would most likely occur over relatively small areas of shoreline jurisdiction.

Application of the SMP: Fill and excavation can result in a change in habitat conditions and temporary effects to water quality. In some cases, these actions can be used to restore habitats that have been degraded as a result of altered watershed processes or past practices. All fills and excavations shall be located, designed and constructed to protect shoreline ecological functions and ecosystem-wide processes, including channel migration. Any adverse impacts to shoreline ecological functions must be mitigated (Subsection 6.4(B)(1)). Fills and excavations may only be permitted when associated with an approved use, and fills in wetlands, floodways, channel migration zones or waterward of the OHWM are further limited in application under the proposed SMP (Subsection 6.4(B)(2-3)).

Shoreline Restoration and Enhancement

Likelihood of development: Several restoration opportunities were identified in the *Shoreline Restoration Plan*. Many of these opportunities originated in planning documents on a watershed scale and would require voluntary actions on the part of the shoreline land owners. Washington

State Parks is planning for improvements to the The John Wayne Pioneer Trail which offers great restoration potential, including providing opportunities for public involvement and education.

Application of the SMP: SMP policy 6.5(A)(1) identifies the intent to promote restoration and enhancement actions that improve shoreline ecological functions and processes and target the needs of sensitive plant, fish and wildlife species. Shoreline restoration and enhancement projects must be designed using the best available scientific and technical information, and implemented using best management practices (Subsection 6.5(B)(2)). Long-term maintenance and monitoring must also be included in restoration or enhancement proposals (Subsection 6.5(B)(5)). In order to eliminate disincentives to restoration resulting from any landward shifts in the OHWM, relief may be granted under RCW 90.58.580.

Shoreline Stabilization

Likelihood of development: New shoreline stabilization is not anticipated to commonly occur, but it is possible it may be proposed.

Application of the SMP: Shoreline stabilization measures tend to result in the simplification of shoreline habitat complexity and increased flow velocities along the shoreline. The occurrence of new stabilization measures will be limited because new development must be located and designed to avoid the need for future shoreline stabilization, if feasible (Subsection 6.6(B)(1)), and new stabilization shall only be permitted to protect an existing primary structure or new structure that cannot be placed so as to avoid the need for stabilization (Subsection 6.6(B)(4)). All proposals for shoreline stabilization structures, both individually and cumulatively, must not result in a net loss of ecological functions, and must be the minimum size necessary. Soft approaches shall be used unless demonstrated not to be sufficient to protect primary structures, dwellings, and businesses (Subsection 6.6(B)(3)).

An existing shoreline stabilization structure, hard or soft, may be replaced with a similar structure if there is a demonstrated need to protect principal uses or structures from erosion caused by currents or waves. While replacement of shoreline stabilization structures may meet the criteria for exemption from a Shoreline Substantial Development Permit, such activity is not exempt from the policies and regulations of the SMP (Subsection 6.6(B)(6)).

Repair and maintenance of existing shoreline stabilization measures may be allowed. Repair and maintenance includes modifications to an existing shoreline stabilization measure that are designed to ensure the continued function of the measure. Any additions to, increases in the size of, or waterward encroachment of existing shoreline stabilization measures shall be considered new structures. Areas of temporary disturbance within the shoreline buffer shall be

expeditiously restored to their pre-project condition or better. While repair and maintenance of shoreline stabilization structures may meet the criteria for exemption from a Shoreline Substantial Development Permit, such activity is not exempt from the policies and regulations of the SMP (Subsection 6.6(B)(7)).

5 NET EFFECT ON ECOLOGICAL FUNCTION

This CIA indicates that future growth is likely to be limited. In limited instances where new development is proposed, this analysis can help inform the Town of potential future shoreline impacts and the importance of specific proposed SMP provisions.

The primary types of anticipated development are agriculture related and include improvements to existing agricultural uses and regular maintenance and repair of existing facilities.

The proposed SMP is expected to maintain existing shoreline functions within Malden while accommodating the reasonably foreseeable future shoreline development. Other local, state and federal regulations, acting in concert with this SMP, will provide further assurances of maintaining shoreline ecological functions over time. The *Shoreline Restoration Plan,* and actions described therein, will ensure that incremental losses that could occur despite SMP provisions do not result in a net loss of functions, and these restoration actions may result in a gradual improvement in shoreline functions.

As discussed above, major elements of the SMP that ensure no net loss of ecological functions fall into four general categories: 1) a proposed environment designation that recognizes the rural, undeveloped nature of the existing shoreline 2) shoreline critical areas regulations that protect sensitive areas through appropriate science-based buffers and limitations on new uses; 3) mitigation sequencing, which directs potential development to first avoid, then minimize, and finally mitigate for unavoidable impacts; and 4) shoreline use and modification provisions, which ensure that likely development is guided by regulations that will protect existing functions while allowing priority shoreline activities to occur. The *Shoreline Restoration Plan* identifies ongoing and planned voluntary restoration that will provide an opportunity to improve shoreline conditions over time.

Given the above provisions of the SMP, including the key features listed above, implementation of the proposed SMP is anticipated to achieve **no net loss of ecological functions in the**

shoreline of the Town of Malden. Voluntary actions identified and prioritized in the *Shoreline Restoration Plan* will provide the opportunity to enhance and restore shoreline functions over time.

6 REFERENCES

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